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United States Patent [19]

Robinson et al.

[11] **Patent Number:** **5,941,648**[45] **Date of Patent:** **Aug. 24, 1999**[54] **PERSONAL DIGITAL ASSISTANT HAVING A FOLDABLE KEYBOARD COMPONENT**5,712,760 1/1998 Coulon et al. 361/680
5,841,635 11/1998 Sadler et al. 361/749[75] Inventors: **Robert J. Robinson**, Jamison, Pa.;
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Bridgewater, N.J.[21] Appl. No.: **09/176,373**[22] Filed: **Oct. 21, 1998**[51] **Int. Cl.⁶** **B41J 3/54**[52] **U.S. Cl.** **400/82; 400/88; 400/100;**
400/472; 400/486; 400/489[58] **Field of Search** 400/100, 486,
400/489, 682, 88, 472, 82; 379/447; 361/680;
341/22[56] **References Cited****U.S. PATENT DOCUMENTS**

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Primary Examiner—Edgar Burr*Assistant Examiner*—Charles H. Nolan, Jr.*Attorney, Agent, or Firm*—Roberts & Mercanti, LLP[57] **ABSTRACT**

A computing assembly which comprises a hand held computer or PDA that contains a housing, a processor in said housing and an input/output arrangement in said housing coupled to said processor for inputting data to, and outputting data from the processor and a foldable keyboard electrically connected to the PDA. The foldable keyboard has first and second planar keyboard halves having a plurality of depressable keys arranged on a surface. The keyboard halves have complementary curved outer peripheral edges and are attached to one another by an intermediate hinge. When in the open position, the first keyboard half is substantially coplanar with the second keyboard half, and the peripheral edges of the first and second keyboard halves form a substantially continuous curvilinear path. When in the closed position, the first keyboard half is folded over, substantially congruent in shape with, and in a plane parallel to the plane of the second keyboard half. Means are provided for electrically connecting the first and second keyboard halves to the hand held computer.

20 Claims, 4 Drawing Sheets